2. The light emitting device of Claim 1, wherein said optical element comprises an optical concentrator.

3. The light emitting device of Claim 2, wherein said optical concentrator comprises a parabolic wall.

4. The light emitting device of Claim 2, wherein said optical concentrator comprises a cone-shaped wall.

5. The light emitting device of Claim 2, wherein said optical concentrator comprises a beveled side wall.

6. The light emitting device of Claim 2, wherein said optical concentrator comprises a side wall coated with metallization.

7. The light emitting device of Claim 2, wherein said optical concentrator comprises a side wall coated with dielectric material.

8. The light emitting device of Claim 1, wherein said optical element comprises a total internal reflector.

9. The light emitting device of Claim 1, wherein said optical element is formed from a material selected from the group of optical glass, III-V semiconductors, II-VI semiconductors, group IV semiconductors and compounds, metal oxides, metal fluorides, diamond, yttrium aluminum garnet, and combinations thereof.

10. The light emitting device of Claim 1, wherein said optical element is formed from a material selected from the group of zirconium oxide, sapphire, GaP, ZnS, materials containing lead oxide, and SiC.

11. The light emitting device of Claim 1, wherein said optical element includes one or more luminescent materials that convert light of a wavelength emitted by said active region to at least another wavelength.

PATENT LAW
GROUP LLP
2635 N. FIRST ST
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

12. The light emitting device of Claim 1, wherein said optical element is coated with one or more luminescent materials that convert light of a wavelength emitted by said active region to at least another wavelength.

13. The light emitting device of Claim 1, wherein said optical element is bonded to a surface of said stack, and wherein a smallest ratio of a length of a base of said optical element to a length of said surface is greater than about one.

14. The light emitting device of Claim 13, wherein said ratio is greater than about two.

15. The light emitting device of Claim 1, wherein said stack is located in a recess of a surface of said optical element.

16. The light emitting device of Claim 1, wherein a refractive index of said optical element for light emitted by said active region is greater than about 1.5.

17. The light emitting device of Claim 16, wherein said refractive index is greater than about 1.8.

18. The light emitting device of Claim 1, wherein a refractive index of said optical element is greater than or equal to a refractive index of said semiconductor layers for light emitted by said active region.

19. The light emitting device of Claim 1, further comprising contacts electrically coupled to said semiconductor layers to apply a voltage across said active region.

20. The light emitting device of Claim 19, wherein at least one of said contacts is highly reflective for light emitted by said active region and is located to reflect said light toward said optical element.

21. The light emitting device of Claim 1, further comprising at least one beveled side located to reflect light emitted from said active region toward said optical element.

PATENT LAW
GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

22. The light emitting device of Claim 1, further comprising at least one layer highly reflective for light emitted by said active region located to reflect said light toward said optical element.

23. The light emitting device of Claim 1, wherein said transparent optical element is directly bonded to at least one of said semiconductor layers.

24. The light emitting device of Claim 1, wherein said stack comprises a transparent superstrate layer disposed above said semiconductor layers and directly bonded to said optical element.

25. The light emitting device of Claim 24, wherein superstrate layer has a refractive index for light emitted by said active region greater than about 1.8.

26. The light emitting device of Claim 24, wherein said superstrate layer is formed from a material selected from the group of sapphire, SiC, GaN, and GaP.

27. The light emitting device of Claim 24, wherein said optical element comprises one of ZnS, zirconium oxide, SiC, materials containing lead oxide, and sapphire, said superstrate comprises one of SiC, GaN, and sapphire, and said semiconductor layers comprise a III-Nitride semiconductor.

28. The light emitting device of Claim 27, further comprising a first contact and a second contact electrically coupled to apply a voltage across said active region; said first contact and said second contact disposed on a same side of said stack.

29. The light emitting device of Claim 24, wherein said optical element is formed from one of zirconium oxide, sapphire, material containing lead oxide, SiC, ZnS, and GaP, said superstrate is formed from a III-Phosphide material, and said semiconductor layers comprise one of III-Phosphide semiconductors and III-Arsenide semiconductors.

PATENT LAW
GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

30. The light emitting device of Claim 27, further comprising a first contact and a second contact electrically coupled to apply a voltage across said active region; said first contact and said second contact disposed on a same side of said stack.

31. The light emitting device of Claim 1, further comprising a transparent bonding layer disposed between said optical element and a surface of said stack, said transparent bonding layer bonding said optical element to said stack.

32. (Amended) A light emitting device having a stack of layers including semiconductor layers comprising an active region, said device comprising:

a transparent optical element bonded to said stack by a bond at an interface disposed between said optical element and said stack; and

a transparent bonding layer disposed between said optical element and a surface of said stack, said transparent bonding layer bonding said optical element to said stack;

wherein said transparent bonding layer is formed from a material selected from the group of optical glass, chalcogenide glass, III-V semiconductors, II-VI semiconductors, group IV semiconductors, metals, metal oxides, metal fluorides, yttrium aluminum garnet, phosphides, arsenides, antimonides, nitrides, and combinations thereof.

33. The light emitting device of Claim 31, wherein said transparent bonding layer includes one or more luminescent materials that convert light of a wavelength emitted by said active region to at least another wavelength.

34. The light emitting device of Claim 31, wherein said bonding layer has an index of refraction greater than about 1.5 for light emitted by said active region.

35. The light emitting device of Claim 34, wherein said index of refraction is greater than about 1.8.

36. The light emitting device of Claim 31, wherein said bonding layer has a thickness less than about 500 Angstroms.

PATENT LAW
GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

37. The light emitting device of Claim 31, wherein said surface includes a surface of one of said semiconductor layers.

38. The light emitting device of Claim 31, wherein said surface includes a surface of a transparent superstrate layer disposed above said semiconductor layers.

39. The light emitting device of Claim 38, wherein said superstrate layer has a refractive index for light emitted by said active region greater than about 1.8.

40. The light emitting device of Claim 38, wherein said superstrate layer is formed from a material selected from the group of sapphire, SiC, GaN, and GaP.

41. The light emitting device of Claim 38, wherein said optical element comprises one of ZnS, zirconium oxide, materials containing lead oxide, SiC, and sapphire, said superstrate comprises one of SiC, GaN, and sapphire, and said semiconductor layers comprise a III-Nitride semiconductor.

42. The light emitting device of Claim 41, further comprising a first contact and a second contact electrically coupled to apply a voltage across said active region; said first contact and said second contact disposed on a same side of said stack.

43. The light emitting device of Claim 38, wherein said optical element is formed from one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS, and GaP, said superstrate is formed from a III-Phosphide material, and said semiconductor layers comprise one of III-Phosphide semiconductors and III-Arsenide semiconductors.

44. The light emitting device of Claim 43, further comprising a first contact and a second contact electrically coupled to apply a voltage across said active region; said first contact and said second contact disposed on a same side of said stack.

PATENT LAW
GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

51. A light emitting device having a stack of layers including semiconductor layers comprising an active region, said device comprising:

an optical element bonded to said stack; and

a first contact and a second contact electrically coupled to apply a voltage across said active region;

wherein said stack of layers comprises at least one III-Phosphide semiconductor layer and said first contact and said second contact are disposed on a same side of said stack.

52. The light emitting device of Claim 51 wherein said optical element comprises one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS, and GaP.

53. (Amended) A light emitting device having a stack of layers including semiconductor layers comprising an active region, said device comprising:

an optical element bonded to said stack; and

a first contact and a second contact electrically coupled to apply a voltage across said active region;

wherein said stack of layers comprises at least one III-Nitride semiconductor layer and said first contact and said second contact are disposed on a same side of said stack, and

wherein said optical element comprises one of zirconium oxide, materials containing lead oxide, SiC, ZnS and sapphire.

Please cancel claim 54.

63. The light emitting device of Claim 31, wherein said transparent bonding layer includes a lead oxide.

64. The light emitting device of Claim 31, wherein said transparent bonding layer includes a tungsten oxide.

Please add the following new claims:

65. The light emitting device of Claim 32, wherein said transparent bonding layer includes one or more luminescent materials that convert light of a wavelength emitted by said active region to at least another wavelength.

PATENT LAW GROUP LLP
2635 N. FIRST ST
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

66. The light emitting device of Claim 32, wherein said bonding layer has an index of refraction greater than about 1.5 for light emitted by said active region.

67. The light emitting device of Claim 66, wherein said index of refraction is greater than about 1.8.

68. The light emitting device of Claim 32, wherein said bonding layer has a thickness less than about 500 Angstroms.

69. The light emitting device of Claim 32, wherein said surface includes a surface of one of said semiconductor layers.

70. The light emitting device of Claim 32, wherein said surface includes a surface of a transparent superstrate layer disposed above said semiconductor layers.

71. The light emitting device of Claim 70, wherein said superstrate layer has a refractive index for light emitted by said active region greater than about 1.8.

72. The light emitting device of Claim 70, wherein said superstrate layer is formed from a material selected from the group of sapphire, SiC, GaN, and GaP.

73. The light emitting device of Claim 70, wherein said optical element comprises one of ZnS, zirconium oxide, materials containing lead oxide, SiC, and sapphire, said superstrate comprises one of SiC, GaN, and sapphire, and said semiconductor layers comprise a III-Nitride semiconductor.

74. The light emitting device of Claim 73, further comprising a first contact and a second contact electrically coupled to apply a voltage across said active region; said first contact and said second contact disposed on a same side of said stack.

75. The light emitting device of Claim 70, wherein said optical element is formed from one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS, and GaP, said superstrate is formed from a III-Phosphide material, and said semiconductor layers comprise one of III-Phosphide semiconductors and III-Arsenide semiconductors.

PATENT LAW
GROUP LLP
2635 N. FIRST ST.
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481

76. The light emitting device of Claim 75, further comprising a first contact and a second contact electrically coupled to apply a voltage across said active region; said first contact and said second contact disposed on a same side of said stack.

PATENT LAW
GROUP LLP
2635 N. FIRST ST
SUITE 223
SAN JOSE, CA 95134
(408) 382-0480
FAX (408) 382-0481